

Cranial nerves + Papers.

III Oculomotor nerve

- **Type:** Parasympathetic, motor supply for the eye.

- **Function:** gives innervation for all of the muscles of the eye except:

- ① lateral rectus muscle
- ② superior oblique m
- ③ dilator papillae

- **if Paralysis of the oculomotor ⑤**

① Patient looks to his shoulder: outward & down divergent.

② paralysis of levator palpebrae superioris muscle ^{palpebrary} responsible for elevating of the eyelid leading to partial ptosis or complete ptosis

③ dilatation of the pupils

④ internal ophthalmoplegia ⑤ loss of light

- **Muscles supply** accommodation reflexes.

① levator palpebrary m → by oculomotor n

② orbicularis oculi m → ^{facial nerve} sympathetic supply

for opening and closure of the eye

③ molar eye → sympathetic supply

④ ciliary muscle → Parasympathetic supply.

ALAOSA

- ① internal ophthalmoplegia
- ② pupil dilatation
- ③ loss of light accommodation reflexes.

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NB:

facial 7 - الذي يتحكم الوجه
oculomotor 3 - الذي يفتح العين
trigeminal 5 - الذي يمسك العين

general

②

①

③

V Trigeminal nerve

type - mixed nerve

- ~~function~~ branches:
- mandibular branch
 - maxillary branch
 - ophthalmic branch

~~Function:~~

normal

① Sensation of the whole ~~face~~ except the tongue

② [↑] motor supply to:

- temporalis m
- (muscles of mastication) - pterygoid ms
- masseter.
- tensor palati
- mylohyoid
- anterior belly of digastric m.

and the ear and the angle of the mandible

Lesions: 14

2 motor

3 reflexes

2 sensation

1) motor: - weakness of muscles of mastication at the same side of the lesion.

- deviation of the jaw opposite side of the lesion.

2) Reflex: - increased jaw reflex

- loss of palatal reflex

- loss of corneal, conjunctival reflexes



[3] Sensation - loss of the sensation in the centre ~~of the face~~ and in the peripherals of the face
 - loss of general sensation of the anterior $\frac{2}{3}$ s of the tongue

لذلك يجب ان

① you should determine if the forehead is ~~ex~~ involved in the forehead or not
 - this can be done by assessing if the patient can raise the eye brows.

- to determine if the lesion is in the upper motor neuron or the lower motor neuron

VII Facial nerve.

— type - mixed parasympathetic nerve.

— function: ① sen

① Sensory: taste sensation of the anterior $\frac{2}{3}$ of the tongue by Chorda tympani muscles.

② Motor: of the whole face except the tongue.
— expressions of the face.

③ Autonomic: to 3 glands: Lacrimal, sublingual and submandibular glands.

— Course: passes from the sternomastoid foramen to the parotid gland then to the parts of the face.

— Examination: each muscle alone.

— lesion: paralysis of the half of the face at the opposite side of the lesion.

1 - loss of taste sensation of the $\frac{2}{3}$ of the tongue.

3 - inability to close the eye.

4 - loss of the normal corrugations of the forehead during looking upwards.

5 - obliteration of the naso-labial fold.

~~IX~~ Glossopharyngeal nerve.

type: mixed, parasympathetic.

function ① Sensatio of the posterior $\frac{1}{3}$ of the tongue and the upper pharynx, and the tonsils.

② motor: - stylopharyngeus m.
- superior constrictor m.

③ Autonomic: Parotid gland

- lesions: ① loss of pharyngeal reflex
② loss of taste and general sensation of posterior $\frac{1}{3}$ of the tongue.

[X] Vagus nerve

- type: mixed, parasympathetic

- Function**[1] Motor:**

- soft palate
- pharynx - Larynx.

[2] Sensory:

- skin over the external auditory meatus
- mucous membrane of GIT
- mucous membrane of the respiratory tract

[3] Autonomic:

- parasympathetic to the heart
- parasympathetic to GIT & RT

- lesions:**[1] Pharyngeal paralysis:**

- Dysphagia
- loss of pharyngeal reflexes

[2] Laryngeal paralysis:

- hoarseness of voice
- aphonia

[3] Others:

- locked in syndrome
- palatal weakness
- nasal regurgitation of food
- tachycardia
- constipation.



- Examination of The Vagus nerve.

[1] Bilateral reflex:

by touching The soft palate by ^{tongue} lateral depressor
→ arch elevation.

[2] pharyngeal reflex:

gag reflex due to contraction of the pharynx.

XII Hypoglossal

- type: ^{الوحيد} pure motor.
- function: motor supply of the tongue.
- Paralysis:-

A Unilateral: tongue deviation to the opposite side of the lesion & disfigurement atrophy.

B Bilateral: - inability to protrude the tongue.
 - swallowing problems.
 - loss of control over the tongue.
 - misarticulation.

C Others: - atrophy & weakness of the tongue muscles
 - wrinkling of the mucosa of the upper area of paralyzed site of the tongue



Tongue Innervation:-

[1] Sensory: by tr-

[A] trigeminal, general sensations

[B] facial n: taste sensations of anterior $\frac{2}{3}$

[C] glossopharyngeal n: general and taste sensations of posterior $\frac{1}{3}$

[2] Motor: by hypoglossal nerve.

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diagnosis:-

① Thorough medical history should be taken

② [muscle and nerve]

Physical examination + lesions, no CSF
facial nerve

③ lab - investigations

④ lab

- audiogram

- electroneurography

- CT

- MRI